Appl. No. 10/699,561   <u>PATENT</u>
Amdt. dated March 1, 2004

This listing of claims will replace all prior versions, and listings of claims in the application:

<u>Listing of Claims:</u>

      1. -12. (Canceled)

      13.   (New) A color management method comprises
determining a first mapping, wherein the first mapping is associated with a monitor and comprises a mapping between RGB color space input into the monitor and a second color space output from the monitor;
      driving a film recorder with a plurality of values in the RGB color space;
      recording a plurality of film images onto film media while the film recorder is driven by the plurality of values in the RGB color space;
      illuminating the film media;
      determining a plurality of values in the second color space while the film media is illuminated;
      determining a second mapping, wherein the second mapping is associated with the film and comprises a mapping between the RGB color space input to the film recorder and the plurality of values in the second color space; and
      determining a third mapping, wherein the third mapping is associated with the film recorder and comprises a mapping between RGB color space input into the monitor and RGB color space input into the film recorder, wherein the third mapping is determined in response to the first mapping and to the second mapping.

      14.   (New) The color management method of claim 13 wherein the second color space is selected from the group consisting: CIE XYZ, ATD, CIE Lab, CIELuv.

      15.   (New) The color management method of claim 14 wherein determining the third mapping comprises determining whether there is a gamut mismatch.

      16.   (New) The color management method of claim 15 wherein determining whether there is a gamut mismatch comprises determining whether a color in a color gamut associated with the monitor is within the color gamut of the film media.

      17.   (New) The color management method of claim 14 further comprising storing the third mapping in a look up table.

      18.   (New) The color management method of claim 17
wherein the second color space is CIE XYZ; and
wherein the method further comprises:
      receiving a first RGB value to drive the monitor;
      determining a second RGB value to drive the film recorder in response to the third mapping; and

providing the second RGB value to the film recorder.

19.   (New) The color management method of claim 13 wherein driving the film recorder with the plurality of values in the RGB color space comprises driving the film recorder with a limited number of values for red, green, and blue components.

20.   (New) The color management method of claim 15 wherein when a color in a color gamut associated with the monitor is not within the color gamut of the film media, the method further comprises:
   determining a corresponding color in the color gamut of the film media; and
   mapping the color to the corresponding color.

21.   (New) The color management method of claim 20 wherein the method further comprises:
   smoothly remapping colors along a line from an achromatic axis to the color to a line from the achromatic axis to the corresponding color.

22.   (New) The color management method of claim 20 wherein the color and the corresponding color have different intensity levels.

23.   (New) A method for a film recorder comprises:
   receiving a first plurality of values in a first color space configured to drive a monitor;
   determining a second plurality of values in the first color space configured to drive a film recorder in response to the first plurality of values and in response to a monitor-to-film mapping; and
   outputting the second plurality of values in the first color space to the film recorder;
   wherein the monitor-to-film mapping is determined by mapping from a color gamut in a second color space of the monitor to a color gamut of film media in the second color space;
   wherein the color gamut of the monitor in the second color space is determined in response to a mapping between input to the monitor in an the first color space an output of the monitor in the second color space; and
   wherein the color gamut of the film media in the second color space is determined in a response to a mapping between input to the film recorder in the first color space and output values of illuminated film media in the second color space.

24.   (New) The method of claim 23 wherein the first color space comprises RGB color space.

25.   (New) The method of claim 23 wherein the second color space is selected from the group consisting: CIE XYZ, ATD, CIE Lab, CIELuv.

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26.   (New) The method of claim 25 wherein outputting the second plurality of values in the first color space to the film recorder further comprises recording an image onto film media with the film recorder in response to the second plurality of values in the first color space.

27.   (New) The method of claim 26 further comprising illuminating the image recorded on the film media.

28.   (New) The method of claim 23 wherein a color within the color gamut of the monitor that is not within the color gamut of the film media is remapped to a color within the color gamut of the film media.

29.   (New) The method of claim 28 wherein colors along a line between the gray axis and the color within the color gamut of the monitor are smoothly remapped to colors along a line between the gray axis and the color within the color gamut of the film media.

30.   (New) The method of claim 23 wherein the color within the color gamut of the monitor that is not within the color gamut of the film media is remapped to a color within the color gamut of the film media at a different intensity.

31.   (New) The method of claim 30 wherein colors along a line between the gray axis and the color within the color gamut of the monitor are non-linearly remapped to colors along a line between the gray axis and the color within the color gamut of the film media.

32.   (New) The method of claim 23 wherein a look up table is used to store the monitor-to-film mapping.